

**Notice of Allowability**

Application No.

10/717,864

Applicant(s)

FRAZIER, GARY A.

Examiner

Brian J. Livedalen

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/13/2006.
2. ☒ The allowed claim(s) is/are 1,3-6,9-11 and 13.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

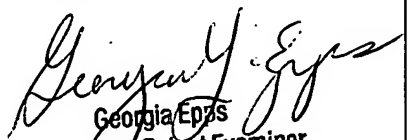
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Georgia Epps  
Supervisory Patent Examiner  
Technology Center 2800

### **DETAILED ACTION**

This action is in response to amendment filed 4/13/2006. Claims 1, 3-6, 9-11, and 13 are pending.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows: Claim 4, line 1, change "claim 2" to --claim 3--.

### ***Allowable Subject Matter***

Claims 1, 3-6, 9-11, and 13 are allowed.

The following is an examiner's statement of reasons for allowance: Claims 1, 3-6, 9-11, and 13 are neither anticipated nor made obvious by the prior art of record.

In regard to claims 1, 3-6, 9, and 10, the prior art fails to disclose an apparatus having first and second resonant tunneling diodes coupled in series with each other between first and second nodes; a reset portion including a photodiode that switches between first and second states in response to varying photonic energy; wherein when the photodiode is in the first state the reset portion normalizes a voltage across each of the resonant tunneling diodes; a first terminal to which is supplied a voltage, and a second terminal to which is supplied a second voltage less than the first voltage; and wherein the reset portion includes a first resistive element coupled between the first

terminal and a first end of the photodiode, a first capacitive element coupled between the first node and the first end of the photodiode, and a second resistive element coupled between the second terminal and a second end of the photodiode, a second capacitive element coupled between the second node and the second end of the photodiode.

In regard to claims 11 and 13, the prior art fails to disclose a method of operating a latch circuit having first and second resonant tunneling diodes couples in series between first and second nodes, and a reset portion coupled to first and second nodes, including: configuring the reset portion to include first and second photodiodes which are each coupled to a respective one of the first and second nodes and are responsive to varying photonic energy for switching between first and second states that are different; and causing the first and second photodiodes to normalize a voltage across each of the resonant tunneling diodes when the reset portion is in a first state, and each of the photodiodes being conductive in the first state and being substantially nonconductive in the second state.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Livedalen whose telephone number is (571) 272-2715. The examiner can normally be reached on 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bjl

  
Georgia Epps  
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